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**February 19, 2015**

**VIA ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, DC 20554

**Re: *Open Internet Remand Proceeding, GN Docket No. 14-28; Framework for Broadband Internet Service, GN Docket No. 10-127***

Dear Ms. Dortch:

The Commission's open Internet policies must be premised on a clear-eyed understanding and analysis of the relevant facts. Several parties have submitted inaccurate and misleading presentations regarding (1) the impetus behind investment in the mobile wireless ecosystem, (2) customer churn among mobile wireless companies, and (3) the relevance of the AWS-3 spectrum auction to this proceeding. These filings deliberately ignore the reality that it has been the bi-partisan, light-touch regulatory approach to broadband services that has encouraged the massive investments in mobile broadband infrastructure and the intense competition that exists in today's marketplace. The Commission cannot base its decision in the open Internet proceeding on these erroneous and misleading submissions.

**I. 3G and 4G Data Services, Not Title II Voice Offerings, Have Driven Mobile Investment.**

Some have suggested that high levels of capital investment in the mobile ecosystem, which (they assert) is subject to Title II regulation, demonstrate that reclassification of broadband Internet access service will not undercut future investment in broadband facilities. Chairman Wheeler, for example, has written that "[o]ver the last 21 years, the wireless industry has invested almost \$300 billion" under rules "similar" to those he is proposing for broadband Internet access, "proving that modernized Title II regulation can encourage investment and

competition.”<sup>1</sup> This analogy is misplaced. The wireless industry’s capital expenditures have been driven not primarily by CMRS voice service offerings, but by Title I mobile broadband services offered over 3G and 4G platforms.

Data on which the Commission has relied in its wireless competition reports demonstrate this point conclusively. In the first years following the 1993 amendments to Section 332, wireless providers’ capital expenditures were relatively modest – a very small fraction of today’s investments. According to CTIA data, industry-wide yearly capex was \$4.98 billion in 1994, \$5.14 billion in 1995, \$8.49 billion in 1996, and \$13.4 billion in 1997.<sup>2</sup> While these figures are large, they pale in comparison to the capital expenditures that mobile providers began to make in the early 2000s as they deployed 3G, and later 4G, mobile data services. The Commission’s *Mobile Competition Reports* show that 2003 was the turning point when providers pivoted from 2G voice offerings toward 3G and 4G mobile broadband offerings.<sup>3</sup> The chart below, compiled using Census data, shows that it was only when mobile providers began undertaking the network upgrades and deployment needed to support these mobile broadband services that capital expenditures truly took off:

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<sup>1</sup> Tom Wheeler, *This Is How We Will Ensure Net Neutrality*, WIRED (Feb. 4, 2015), available at <http://www.wired.com/2015/02/fcc-chairman-wheeler-net-neutrality/>.

<sup>2</sup> Comments of CTIA – The Wireless Association, WT Docket No. 13-135, at 4 (June 17, 2013) (chart depicting reported cumulative capex per year).

<sup>3</sup> The *Eighth Mobile Competition Report*, issued in 2003, cited Verizon’s plan at that time to launch EVDO in Washington, DC and San Diego, California. See *Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Eighth Report, 18 FCC Rcd 14783, 14820 ¶ 75 (2003). The *Ninth Mobile Competition Report* discussed Verizon’s plan to expand its EVDO deployment to one-third of its network (or 75 million subscribers) by the end of 2004. See *Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Ninth Report, 19 FCC Rcd 20597, 20652 ¶ 133 (2004). It further noted Sprint’s plan to deploy EVDO in a majority of top metropolitan markets by 2005, with initial service available in select markets by the end of 2004. See *id.* at 20652-53 ¶ 134. The *Tenth Mobile Competition Report* confirmed that Verizon had launched EVDO service in 31 cities covering 75 million people, and noted that Verizon planned on expanding its service to cover 150 million people by the end of 2005. It also observed that Sprint began its EVDO deployment in July 2005, and that both Sprint and Cingular were making concerted efforts “to match the mobile broadband service which Verizon Wireless launched in late 2003.” See *Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Tenth Report, 20 FCC Rcd 15908, 15911 ¶ 3 (2005).

### Wireless Telecommunications Annual Capital Expenditures

Year <sup>4</sup>	Total New Expenditures (Census)	New Structures <sup>5</sup> (Census)	New Equipment (Census)
1998	8.2	2.4	5.8
1999	14.4	5.0	9.4
2000	25.3	7.7	17.6
2001	24.0	11.3	12.7
2002	23.0	11.4	11.6
2003	21.0	11.5	9.5
2004	24.0	11.7	12.3
2005	27.3	16.5	10.9
2006	27.9	12.6	15.3
2007	23.0	7.5	15.5
2008	25.2	6.6	18.6
2009	20.6	3.9	16.7
2010	22.8	4.4	18.4
2011	25.2	3.9	21.3
2012	32.9	5.7	27.2
2013	33.5	10.0	23.5

<sup>4</sup> See 1999 Annual Capital Expenditures Survey, Table 4c (1998 Revised), <https://www.census.gov/econ/aces/xls/1999/ace-99.pdf>; 2000 Annual Capital Expenditures Survey, Table 4b (1999 Revised), <http://www.census.gov/econ/aces/xls/2000/ace-00.pdf> ; 2001 Annual Capital Expenditures Survey, Table 4b (2000 Revised), <http://www.census.gov/prod/2003pubs/ace-01.pdf>; 2002 Annual Capital Expenditures Survey, Table 4b (2001 Revised), <http://www.census.gov/econ/aces/xls/2002/ace-02.pdf>; 2003 Annual Capital Expenditures Survey, Table 4b (2002 Revised), <http://www.census.gov/prod/2005pubs/ace-03.pdf>; 2004 Annual Capital Expenditures Survey, Table 4b (2003 Revised), <https://www.census.gov/econ/aces/xls/2004/ace-04.pdf>; 2005 Annual Capital Expenditures Survey, Table 4b (2004 Revised), <http://www.census.gov/econ/aces/xls/2005/ace-05.pdf>; 2006 Annual Capital Expenditures Survey, Table 4b (2005 Revised); 2007 Annual Capital Expenditures Survey, Table 4b (2006 Revised); 2008 Annual Capital Expenditures Survey, Table 4b (2007 Revised); 2009 Annual Capital Expenditures Survey, Table 4b (2008 Revised and Restated); 2010 Annual Capital Expenditures Survey, Table 4b (2009 Revised); 2011 Annual Capital Expenditures Survey, Table 4b (2010 Revised) [https://www.census.gov/econ/aces/xls/2011/html\\_tables.html#table4b](https://www.census.gov/econ/aces/xls/2011/html_tables.html#table4b); 2012 Annual Capital Expenditures Survey, Table 4b (2011 Revised) [https://www.census.gov/econ/aces/xls/2012/html\\_tables.html#table4b](https://www.census.gov/econ/aces/xls/2012/html_tables.html#table4b); 2013 Annual Capital Expenditures Survey, Table 4b (2012 Revised) [http://www.census.gov/econ/aces/xls/2013/html\\_tables.html#table4b](http://www.census.gov/econ/aces/xls/2013/html_tables.html#table4b); 2013 Annual Capital Expenditures Survey, Table 4a [http://www.census.gov/econ/aces/xls/2013/html\\_tables.html#table4a](http://www.census.gov/econ/aces/xls/2013/html_tables.html#table4a).

<sup>5</sup> The “Structures” category includes expenditures on buildings and built-in machinery/equipment.

Thus, whereas total capital investment in the decade leading up to the 2003 shift to data services (1994-2003) totaled \$147.91 billion, investment in the decade after that (2004-2013) was \$262.4 billion – a jump of more than 77%.<sup>6</sup>

## **II. About One in Five Wireless Customers Switches Providers Every Year, and Those That Stay With Their Provider Do So Based on Both Price and Non-Price Factors.**

Commission staff recently submitted into the record a Bernstein Research report evaluating mobile pricing.<sup>7</sup> The Report details aggressive price competition within the mobile ecosystem,<sup>8</sup> but oddly takes this intense competition, in concert with purportedly low churn rates, as demonstrating that customers lack the freedom to change mobile providers. This conclusion is faulty.<sup>9</sup> While the Bernstein report is correct in identifying intense price competition, it understates the non-price benefits that prompt customers to stay with their provider even when another might seem more attractive purely on the basis of price. Nothing about the Bernstein report – which the Commission did not even mention in the recent *Seventeenth Mobile Competition Report*<sup>10</sup> – justifies the reclassification of broadband Internet access services.

First, the Bernstein report fails to recognize that churn rates are, in fact, quite high, and gives insufficient attention to the fact that barriers to switching are *declining*, undercutting the view that customers are locked in to particular providers. According to the *Seventeenth Mobile Competition Report*, as of the second quarter of 2014, the top four providers were losing between 14.4% and 28.8% of their customers per year.<sup>11</sup> When these figures are weighted to account for the four providers' actual subscribership figures, the annual churn rate nationwide is 19.4%.<sup>12</sup>

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<sup>6</sup> The “total capital investment” figure for 1994-2003 was calculated using CTIA data for 1994-1997 and Census data for 1998-2003 (Census data does not cover the pre-1998 period).

<sup>7</sup> Paul de Sa, Ian Chun and Julia Zheng, Bernstein Research, *U.S. Telecom: A Different Way to Compare Mobile Pricing (or Does Discounting Matter?)* (Aug. 21, 2014) attached to Letter from Michael J. Jacobs, Wireline Competition Bureau, FCC to Marlene Dortch, Secretary, FCC, Docket No. 14-28 (Feb. 5, 2015).

<sup>8</sup> *Id.* at 17.

<sup>9</sup> Similar assertions by other parties, such as the Open Technology Institute and Consumers Union, are flawed for the same reasons explained here. See Letter from Michael Calabrese, New America, and Delara Derakhshani, Consumers Union, to Marlene H. Dortch, FCC, GN Docket Nos. 14-28 & 10-127 (filed Jan. 28, 2015).

<sup>10</sup> *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Seventeenth Report, WT Docket No. 13-135, DA 14-1862 (Dec. 28, 2014) (emphasis added) (“*Seventeenth Mobile Competition Report*”).

<sup>11</sup> See *id.* at Chart II.B.6. Although this chart purports to show “quarterly” churn, the Report’s text makes clear that the figures provided are in fact the average monthly churn figures for each provider during the quarter at issue. See *id.* ¶ 26 (“The churn rate for the period is equal to the average of the churn rate for each month of that period, e.g., the three months in a quarter or the twelve months for an annual churn rate.”). Thus, to calculate the annualized churn rate, one must multiply the figure in the chart by 12.

<sup>12</sup> See *id.* at Table II.B.1; *id.* at Chart II.B.6.

That is, nearly one in every five customers switches providers every year. This high level of churn refutes claims that customers face substantial barriers to switching.

Meanwhile, switching costs continue to decline for consumers. All four nationwide carriers offer pro-rated ETF policies that lower the costs to consumers who transfer services.<sup>13</sup> Moreover, as the Bernstein analysis acknowledges, providers are increasingly offering ETF buyouts to new customers.<sup>14</sup> The Commission, too, has recognized the increased use of ETF buyouts, designed to “encourage customers to switch from rivals by *reducing switching costs*.”<sup>15</sup> The *Seventeenth Mobile Competition Report* cited new ETF buyout options offered by AT&T, Sprint, and T-Mobile introduced just last year.<sup>16</sup> It similarly noted that Sprint recently offered a “Cut Your Bill in Half Event” for Verizon and AT&T customers interested in switching to Sprint.<sup>17</sup> T-Mobile has been “eliminating contracts,” and “Sprint, AT&T and Verizon have,” in response, “begun moving away from two-year contracts as well.”<sup>18</sup>

Likewise, it is easier than ever to pay off a handset or bring it to another provider. Carriers are competing on the payments they offer for used phones through their device buy-back programs<sup>19</sup> and encourage customers to trade in old phones as part of new service offers.<sup>20</sup>

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<sup>13</sup> See, e.g., Letter from Kathleen Grillo, Verizon, to Joel Gurin, FCC, at 3 (Feb. 23, 2010), available at <http://transition.fcc.gov/cgb/etf/VerizonWirelessETFResponse.pdf> (“The ETF declines over time, \$5 each month completed by the customer for the \$175 ETF and \$10 each month for the \$350 ETF. A customer who chooses a month-to-month or prepaid plan is not subject to an ETF.”); Letter from Robert F. Quinn, AT&T, to Joel Gurin and Ruth Milkman, FCC, at 2 (Feb. 23, 2010), available at [http://transition.fcc.gov/cgb/etf/ATT\\_ETF\\_Response.pdf](http://transition.fcc.gov/cgb/etf/ATT_ETF_Response.pdf); Letter from Vonya B. McCann, Sprint Nextel, to Joel Gurin and Ruth Milkman, FCC, at 2 (Feb. 23, 2010), available at <http://transition.fcc.gov/cgb/etf/SprintETFResponse.pdf>; Letter from Thomas J. Sugrue, T-Mobile, to Joel Gurin, FCC, at 7 (Feb. 23, 2010), available at <http://transition.fcc.gov/cgb/etf/TMobileETFResponse.pdf>.

<sup>14</sup> See, e.g., T-Mobile, *Get the phone you want today. We'll pay your early termination fees*, (stating, “Get up to \$350 per line based on the Early Termination Fees (ETFs) on your carrier’s final bill.”), available at: <http://www.t-mobile.com/offer/switch-carriers-no-early-termination-fee.html>; Sprint, *Switch to Sprint and we will buy out your family's contract - up to \$350 per line*, [https://promo.sprint.com/Registration/ETFBuyoutLanding?question\\_box=etf%20buyout&id16=etf%20buyout](https://promo.sprint.com/Registration/ETFBuyoutLanding?question_box=etf%20buyout&id16=etf%20buyout).

<sup>15</sup> See *Seventeenth Mobile Competition Report*, ¶ 145 (emphasis added).

<sup>16</sup> See *id.*

<sup>17</sup> *Id.* at Table V.A.iv.

<sup>18</sup> James O’Toole, CNN Money, *T-Mobile is at a crossroads, so is the U.S. wireless industry*” (June 8, 2014), available at <http://money.cnn.com/2014/06/08/technology/mobile/tmobile-sprint/>.

<sup>19</sup> See, e.g., AT&T, *AT&T Buyback program*, available at: <https://buyback.att.com/home.php5?c=en-us> ; T-Mobile, *The best trade-In value in wireless guaranteed!*, available at: <http://www.t-mobile.com/cell-phone-trade-in.html>; Sprint, *Sprint Buyback Program*, available at: <https://secure.sprintbuyback.com/cns/>



Carriers also have adopted transparent unlocking policies allowing customers to unlock phones to work on other networks.<sup>21</sup> And customer devices (including those that Bernstein used in its analysis) are equipped to work on a variety of wireless networks.<sup>22</sup> Thus, customers have fewer hurdles than ever to upgrade or maintain their old device when switching providers. Former Deputy Assistant Attorney General for Economics in the Antitrust Division of the U.S. Department of Justice Janusz Ordover and Dr. Andres Lerner confirm this point: having examined churn in the wireless broadband marketplace, they conclude that “subscribers are not ‘locked-in’ to specific broadband networks” and that “subscriber switching costs are low.”<sup>23</sup>

Second, while the Bernstein report alludes to non-price factors that differentiate mobile service providers, it fails to acknowledge that such factors influence a customer’s choice of service provider. For example, the Bernstein report cites a Root Metrics report regarding network quality factors (“e.g., network coverage, reliability, voice quality, and data speed”) but nevertheless presumes that a customer who chooses to stay with his or her existing provider notwithstanding a cheaper third-party offering must be “locked in.” This is not so. As the Commission recently held in its *Seventeenth Mobile Competition Report*: “Providers take actions and make expenditures to differentiate themselves from competitors and to imitate initiatives of their competitors that have been successful in attracting customers. Such non-price rivalry can influence a customer’s choice of a provider and impose significant competitive constraints, especially in high technology industries that experience rapid innovation.”<sup>24</sup> Thus, “[m]obile wireless service providers differentiate themselves in the marketplace by improving the customer network experience through improvements in capacity, coverage, and service quality.”<sup>25</sup> Professors Ordover and Lerner concur, explaining that “[w]ireless providers compete intensely for customers on the basis of price, network coverage and reliability, plan characteristics, and with respect to important aspects of the wireless ecosystem, including the provision of valuable services, handset devices, operating systems, applications, and content.”<sup>26</sup>

Non-price competition is real, and significant. The *Seventeenth Mobile Competition Report* indicates that providers differentiate themselves in various ways. For example, Verizon

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<sup>20</sup> See, e.g., Sprint, *Cut Your Bill in Half Event*, available at: <https://halfprice.sprint.com/>; Sprint, *It’s a T-Mobile Triple Threat: Switch to Sprint and save big every month*, available at: <http://www.sprint.com/landings/tmobile-buyback/index.html?ECID=vanity:timetosave>

<sup>21</sup> CTIA, Consumer Code for Wireless Service, available at: <http://www.ctia.org/policy-initiatives/voluntary-guidelines/consumer-code-for-wireless-service>

<sup>22</sup> See Apple, *Ultrastar LTE*, available at: <https://www.apple.com/iphone/LTE/>; Lerner/Ordover White Paper at 13.

<sup>23</sup> Letter from Kathleen Grillo, Verizon, to Marlene Dortch, Secretary, FCC, Docket No. 14-28 (Jan. 15, 2015), attaching Andres V. Lerner and Janusz A. Ordover, White Paper, *The “Terminating Access Monopoly” Theory and the Provision of Broadband Internet Access* at 3 (Jan. 15, 2015) (Ordover/Lerner White Paper).

<sup>24</sup> *Seventeenth Mobile Competition Report* ¶168.

<sup>25</sup> *Id.* ¶169.

<sup>26</sup> Ordover/Lerner White Paper at 7.

and AT&T engage in higher capital investment than Sprint and T-Mobile,<sup>27</sup> whereas Verizon and T-Mobile offer faster network speeds than AT&T and Sprint.<sup>28</sup> It is no secret that Verizon considers the comparative quality of its network to be a competitive advantage, and Verizon invests considerably in ensuring this quality. Thus, even as the rollout of 4G LTE continues, Verizon began further upgrades of its 4G network in 2014 by rolling out “XLTE,” which delivers faster peak data speeds, and double the bandwidth of “regular” 4G LTE.<sup>29</sup> Verizon’s roll-out of XLTE in many of its 4G LTE markets is expected to improve performance on Verizon’s wireless broadband network, especially in densely populated areas.<sup>30</sup> Other wireless providers also continue to invest in new capabilities. For example, Sprint’s transition from WiMAX technology to LTE is expected to be complete by the end of 2015.<sup>31</sup> In addition, Sprint is partnering with both CCA and NetAmerica to accelerate the deployment of 4G LTE in rural communities.<sup>32</sup>

Mobile providers also compete on other non-price bases. “In addition to competing on price and network quality, mobile wireless providers continue to compete by offering consumers a variety of different mobile wireless devices with innovative features.”<sup>33</sup> Multiple service providers offer a wide range of the most popular smartphone operating systems and tablets, which guarantees customer flexibility “to pair their preferred operating systems with various service providers.”<sup>34</sup> T-Mobile, for example, has embraced its “Uncarrier” approach, offering a host of features and business practices meant to differentiate itself from its competitors.<sup>35</sup>

Non-price distinctions, then, play a substantial role in customers’ decision-making, alongside the price distinctions discussed by the Bernstein report. That report’s presumption that rational customers will always switch to cheaper offerings when able to, without looking under the hood at non-price distinctions between available offerings, is thus badly misguided, and cannot serve as a basis for reclassification of mobile broadband Internet access. As detailed above, churn is in fact quite high, eviscerating any presumption that customers must be “locked

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<sup>27</sup> *Seventeenth Mobile Competition Report* at 86, Chart VI.A.1.

<sup>28</sup> *Id.* ¶¶ 193-197. According to Ookla Speedtest data, for instance, the median download speeds offered by T-Mobile increased from 6.16 Mbps in 2013 to 9.89 Mbps during the first half of 2014. *Id.* at 98, Chart VI.C.1.

<sup>29</sup> Press Release, “XLTE: America’s Best Network Gets Even Better” (Oct. 16, 2014), *available at* <http://www.verizonwireless.com/news/article/2014/05/verizon-wireless-xlte.html>. As of June 2014, the XLTE 4G network had been launched in over 300 of Verizon’s 500 4G LTE-ready cities. *See* Angela Moscaritolo, PCMag, “Verizon Brings Super-Charged XLTE to 300 Markets” (June 27, 2014), *available at* <http://www.pcmag.com/article2/0,2817,2460175,00.asp>.

<sup>30</sup> Angela Moscaritolo, PCMag, “Verizon Brings Super-Charged XLTE to 300 Markets,” (June 27, 2014), *available at* <http://www.pcmag.com/article2/0,2817,2460175,00.asp>.

<sup>31</sup> *Seventeenth Mobile Competition Report* at ¶ 185.

<sup>32</sup> *Id.* ¶ 186.

<sup>33</sup> *Id.* ¶ 208.

<sup>34</sup> *Id.* ¶ 209.

<sup>35</sup> *See, e.g., id.* ¶ 214.

in.” The truth is that many customers shift providers every year, and those who stay with their providers do so on the basis of assorted price and non-price factors, just as in any other market.

### **III. THE RESULTS OF THE AWS-3 SPECTRUM AUCTION ARE NOT RELEVANT TO THE EFFECTS OF BROADBAND RECLASSIFICATION.**

Some have misinterpreted the outcome of the AWS-3 spectrum auction for purposes of this proceeding,<sup>36</sup> but the revenues raised there say nothing about the effect that reclassification would have on broadband investment. The AWS-3 auction was the first significant spectrum auction since 2008, following years of startling growth in demand for mobile broadband services and broad recognition of an ongoing “spectrum crunch.” Given the continued deployment of 4G service and the rise of the “Internet of Things,” wireless providers interested in expanding their network capabilities to meet consumers’ growing demand have little choice but to obtain the spectrum they need for their businesses when it becomes available. As Verizon senior executives have made crystal clear to the investment community and to the public: “Title II is an extreme and risky path that will jeopardize our investment and the development of innovation in broadband Internet and related services....So when I said before and [was] misquoted on the fact that it would not hurt our investment, I was talking about 2015. But if this piece of Title II was to pass, I can absolutely assure you it would certainly change the way we then view our investment in our networks.”<sup>37</sup>

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For the reasons discussed above, there is no merit to suggestions that historic investment in wireless infrastructure supports reclassification of broadband Internet access offerings. Likewise, the Bernstein Research report filed in the record by staff misinterprets data regarding mobile customer switching, and cannot be used to justify such reclassification.

Respectfully submitted,



William H. Johnson

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<sup>36</sup> See, e.g., Letter from Catherine R. Sloan, CCIA, to Marlene H. Dortch, FCC, GN Docket Nos. 14-28 & 10-127, at Appendix B (Feb. 13, 2015).

<sup>37</sup> Verizon Policy Blog, “Verizon CFO Fran Shammo reiterates the dangers of Title II for jobs and investment” (Jan. 22, 2015), available at <http://publicpolicy.verizon.com/blog/entry/verizon-cfo-fran-shammo-reiterates-the-dangers-of-title-ii-for-jobs-and-inv>.